

Remarks

Reconsideration of this Application is respectfully requested.

Claims 1-28 are pending in the application, with 1 and 13 being the independent claims. No changes to the claims are presented herein.

Allowable claims

Applicant acknowledges with appreciation the Examiner's statement of allowance of claims 13-25, 27, and 28. Applicant further acknowledges with appreciation the Examiner's indication of allowability of claim 26 if rewritten in independent form to include all the limitations of it's base claim 1. Applicant elects to retain claim 26 in dependent form at the present time in view of the belief that, for reasons set forth below, base claim 1 is clearly and patentably distinguishable over the references of record.

Interview Summary

Applicant acknowledges with appreciation the courtesy extended by Examiner Ricci to Applicant and Applicant's representatives during the interview conducted on June 15, 2005.

Based on the explanation provided at the interview and on the following remarks, Applicant respectfully requests that the Examiner reconsider all outstanding objections and rejections and that they be withdrawn.

Rejection under 35 U.S.C. § 103

Claims 1-12 stand rejected under 35 U.S.C. §103(a) as being allegedly unpatentable over the "Borehead" arrowhead in view of U.S. Patent No. 4,534,568 to Tone. This rejection is respectfully traversed for the following reasons.

The Examiner argues that the "Borehead appears to show an arrowhead including a ferrule with a blade, the blade having a first planar portion in a plane parallel to the ferrule axis, a second portion disposed at an angle to the plane of the first portion, and a curved airfoil region connecting the first and second portions that would produce torque about the longitudinal axis." (Office Action, dated May 3, 2005, p. 2.)

The Examiner acknowledges that the blades of the Borehead arrowhead are solid. The Examiner argues, however, that Tone "shows that curved arrow blades may include a cutout section; this cutout would reduce the weight and wind resistance. One would recognize that this cutout would be desirable with the Borehead to allow the arrow to travel faster with less wind resistance." *Id* at pp. 2-3.

As was explained at the interview, a person of ordinary skill in the relevant art of arrowhead design would be led away from using a vented airfoil shape in light of Tone's teaching. Tone's vented blades are all flat. The only airfoil shaped blade disclosed by Tone (*see* Fig. 11 and Col. 9, lines 26-32) is un-vented. There is no suggestion in the Tone disclosure that vents could be added to the airfoil shaped blades.

It was pointed out at the interview that known references that discuss the use of airfoil blades have solid surface blades. This is because the references think of airfoil blades as turbines. It would be counterintuitive to put vent holes in a turbine blade. The reference teachings, as exemplified by Tone, are concerned with providing a low amount of frictional resistance to rotation of the arrowhead needed to reduce the amount of windplaning caused by a broad blade arrowhead. (Tone, Col. 2, lines 17-20.)

Applicant discovered that a solid surface airfoil type blade is actually detrimental to accuracy. When an arrow is released from the bow, it flexes as a result of the force

applied by the bowstring against the nock. If the arrow starts to rotate immediately, as is the case with a solid surface airfoil shaped blade, the flight is severely adversely affected by the flexing. Applicant discovered through testing that with a solid surface airfoil blade, the arrow literally could "not [consistently] hit the broadside of a barn."

Applicant discovered that if vent openings are incorporated into the blade surfaces, resistance in the first few critical feet of flight is in fact increased. This inhibits rotation until the arrow straightens out. As the arrow shaft straightens out, rotational speed is increased. By that point, the arrow is sufficiently straight that the flight will be true.

A person of ordinary skill in the relevant art of arrowhead design would be led away from using a vented airfoil shape in light of Tone's teaching. As noted, Tone's vented blades are all flat. The only airfoil shaped blade disclosed by Tone is un-vented. There is no suggestion in the Tone disclosure that vents could be added to the airfoil shaped blades. The use of a vented airfoil shaped blade would be counterintuitive to Tone's object of "causing rotation in the direction of arrow 53, instead of physically offsetting the blades relative to the axis of the arrowhead." (Col. 9, lines 30-32.)

In view of the fact that Tone teaches away from adding venting to an airfoil shaped blade, it is submitted that combining the teaching of Tone with the Borehead would not result in a vented airfoil shaped arrowhead. On the contrary, the Tone teaching adds nothing to the Borehead that would suggest to one of ordinary skill in the art to add vents to the airfoil shaped blades of the Borehead. The only such suggestion comes from Applicant's own novel teaching. It is too well settled for citation that this hindsight approach to obviousness is impermissible.

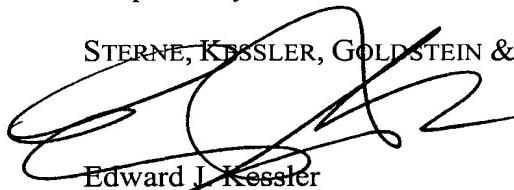
Conclusion

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicant believes that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment and Reply is respectfully requested.

Respectfully submitted,

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